

Appl. No. 10/063,840
Docket No. 121800/GEM-0007

REMARKS / ARGUMENTS

Status of Claims

Claims 1-30 are pending in the application and stand rejected. Applicant herein provides clarifying remarks to overcome the rejections, leaving Claims 1-30 for consideration.

Applicant respectfully submits that the rejections under 35 U.S.C. §102(b) have been traversed, that no new matter has been entered, and that the application is in condition for allowance.

The accompanying remarks were not presented earlier because Applicant did not fully appreciate the nature of the Examiner's position until the Applicant was advised in more detail of the position by the final rejection, which emphasized inherent anticipation, Paper 26042005, pages 2-4. Applicant's Attorney thanks the Examiner for this additional clarification, but nonetheless respectfully disagrees with the Examiner for the additional reasons set forth herein.

Rejections Under 35 U.S.C. §102(b)

Claims 1-30 stand rejected under 35 U.S.C. §102(b) as being anticipated by Heuscher et al. (U.S. Patent No. 6,154,516, hereinafter Heuscher).

Applicant traverses these rejections for the following reasons.

Applicant respectfully submits that "[a] claim is anticipated only if *each and every element* as set forth in the claim is found, either expressly or inherently described, *in a single prior art reference.*" *Verdegaal Bros. V. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987) (emphasis added). Moreover, "[t]he identical invention must be shown in as complete detail as is contained in the *** claim." *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). Furthermore, the single source must disclose all of the claimed elements "*arranged as in the claim.*" *Structural Rubber Prods. Co. v. Park Rubber Co.*, 749 F.2d 707, 716, 223 U.S.P.Q. 1264, 1271 (Fed. Cir. 1984) (emphasis added). Missing

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elements may not be supplied by the knowledge of one skilled in the art or the disclosure of another reference. Titanium Metals Corp. v. Banner, 778 F.2d 775, 780, 227 U.S.P.Q. 773, 777 (Fed. Cir. 1985).

The Examiner comments: "However, the Examiner would like to point out that Heuscher et al anticipate[s] the above limitation [reference made to the limitation "communicating an exposure marker-in-signal to said electrocardiogram device such that said exposure marker-in-signal is associated with the EKG waveform data" of independent Claims 1, 13, 23, 24 and 25] since the CT image acquisition is gated by ECG or EKG where the gating provides specific phase, *in other words*, marker in the ECG or EKG." Paper 26042005, page 2 (emphasis added).

Here, the Examiner appears to be equating cardiac gated CT image acquisition, which involves a signal communicated *from* the electrocardiogram device *to* the CT imaging device for gating the CT, with the claimed *exposure marker-in signal communication*, which involves a signal communicated *from* the CT imaging device *to* the electrocardiogram device for overlaying the EKG waveform with data to indicate the start of the CT scan. Applicant respectfully submits that the two communication schemes are directed in opposite directions, and as such, the first does not anticipate the second.

The Examiner further comments: "Heuscher et al device inherently disclose[s] this limitation [reference made to Applicant's assertion 'an exposure marker-in-signal 228 being a CT event signal generated by CT imaging system 4 that is communicated to EKG monitoring device 2 via EKG sync marker input 8 so as to overlay EKG waveform data 200 and indicate the start of a CT scan.']. As stated above, the marker-in-signal is disclosed. In addition, Heuscher et al's scanning includes specific protocol where the control of the CT scan use look up table to asses patient characteristic ECG, i.e. ECG waveform and phase in which the CT scan acquires the images (col. 5, line 61-col. 6, line 9)." Paper 26042005, page 2.

Here, the Examiner appears to be relying on inherent disclosure of the claimed *exposure marker-in signal* in Heuscher, which Applicant respectfully disagrees with.

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At col. 5, line 61-col. 6, line 9, Applicant finds Heuscher to disclose a "patient-specific scan protocol" (col. 5 lines 61-62 specifically), and finds no disclosure, absolute or inherent, of *an exposure marker-in signal that is communicated to the electrocardiogram*, as claimed.

The Examiner further comments: "Heuscher et al. clearly anticipate[s] this limitation [reference made to Applicant's assertion of communication to the EKG monitoring device] since the CT control monitors the ECG or EKG data, i.e. communicates with the ECG or EKG to obtain the phase information of the patient to control the CT scanning (col. 5, lines 54-60)." Paper 26042005, pages 2-3.

Here, the Examiner appears to be equating a communication between the CT and the EKG with the existence of *an exposure marker-in signal* that is communicated to the electrocardiogram. Applicant respectfully disagrees with this assertion.

At col. 5, lines 54-60, Applicant finds Heuscher to disclose sampled data views to be tagged with ECG data (col. 5, lines 59-60 specifically), and finds no disclosure, absolute or inherent, of *an exposure marker-in signal that is communicated to the electrocardiogram*, as claimed. In fact, by the very language of Heuscher at col. 5, lines 54-60, the data flow of the "tag" in Heuscher is *from* the ECG *to* the sampled data views, which is in the opposite direction to the *exposure marker-in signal* that is communicated *from* the CT *to* the electrocardiogram. In addition, Applicant submits that the "tag" in Heuscher is not an exposure marker-in signal since Heuscher does not disclose the "tag" as carrying any information relative to the start of a CT scan.

In alleging anticipation, the Examiner appears to rely on an interpretation of Heuscher rather than a disclosure in Heuscher of each and every element arranged as claimed, which Applicant submits is improper for purposes of anticipation.

Applicant has specifically claimed the communication of an exposure marker-in signal to the electrocardiogram, and submits that Heuscher does not disclose such a limitation, absolutely or inherently, and as such, Heuscher does not disclose each and every element of the claimed invention arranged as claimed, and therefore cannot properly be used to establish a prima facie case of anticipation.

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Regarding Claims 1, 7, 9-13, 18-25 and 27

The Examiner alleges that Heuscher discloses all claimed elements of the subject claims, and more specifically alleges that Heuscher discloses each and every element of independent Claims 1, 13, 23, 24 and 25 (as well as dependent Claims 7, 9-12, 18-22 and 27) by referencing Heuscher at Figures 1 and 2, and at Column 2 lines 13-24, Column 2 line 62 to Column 3 line 8, and Column 4 line 7 to Column 7 line 59. Paper 26042005, pages 3-4.

In respectful disagreement with the Examiner, and for at least the reasons set forth above, Applicant submits that Heuscher does not disclose *each and every element* of the claimed invention *arranged as claimed*.

In addition to the foregoing, the Examiner in alleging anticipation has not shown with specificity where Heuscher discloses:

"...wherein said communicating includes *introducing said exposure marker-in signal to said electrocardiogram device so as to associate said exposure marker-in signal with the start of a computed tomography imaging system scan.*" (Claims 7 and 18);

"...wherein said *exposure marker-in signal is responsive to said computed tomography imaging system.*" (Claims 10 and 20);

"...processing *the computed tomography image data, the EKG waveform data and said exposure marker-in signal* so as to associate the EKG waveform data with the computed tomography image data." (Claims 11, 13, 21, 23, 24 and 25).

Absent disclosure in Heuscher of each and every element of the claimed invention arranged as claimed, Heuscher cannot be anticipatory.

Regarding Claims 2, 5 and 14

The Examiner alleges that Heuscher discloses all claimed elements of the subject dependent claims by referencing Heuscher at Column 6 lines 45-50. Paper 26042005, page 4.

In respectful disagreement with the Examiner, and for at least the reasons set forth above, Applicant submits that Heuscher does not disclose *each and every element* of the

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claimed invention *arranged as claimed*, as the dependent claims inherit all of the limitations of the respective parent claim.

Absent disclosure in Heuscher of each and every element of the claimed invention arranged as claimed, Heuscher cannot be anticipatory.

Regarding Claims 3, 4, 15, 16, 14-22 and 28-30

The Examiner alleges that Heuscher discloses all claimed elements of the subject dependent claims by referencing Heuscher at Column 5 lines 37-53, Column 5 line 61 through Column 6 line 9, and Column 7 lines 21-32. Paper 26042005, page 4.

In respectful disagreement with the Examiner, and for at least the reasons set forth above, Applicant submits that Heuscher does not disclose *each and every element* of the claimed invention *arranged as claimed*, as the dependent claims inherit all of the limitations of the respective parent claim.

In addition to the foregoing, the Examiner in alleging anticipation has not shown with specificity where Heuscher discloses:

"...wherein said generating includes *generating and introducing an event signal to said electrocardiogram device so as to overlay the EKG waveform data with said event signal* such that said event signal is associated with the EKG waveform data." (Claims 3 and 15);

"...wherein said communicating an exposure marker-in signal includes *generating and introducing said exposure marker-in signal so as to overlay the EKG waveform data with said exposure marker-in signal*." (Claims 4 and 16);

"... operating the computed tomography imaging system so as to *generate an exposure mark-in signal*; and

wherein said communicating an exposure marker-in signal to said electrocardiogram device comprises *communicating said generated exposure marker-in signal to said electrocardiogram device*." (Claim 28);

"... *said generated exposure marker-in signal represents a computed tomography event signal*; and

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said communicated exposure marker-in signal is *communicated so as to overlay the EKG waveform data and indicate the start of a CT scan.*" (Claim 29);

"... operates the computed tomography imaging system *so as to generate an exposure marker-in signal*; and

communicates the generated exposure marker-in signal to said electrocardiogram device such that *the generated exposure marker-in signal is associated with the EKG waveform data.*" (Claim 30).

Absent disclosure in Heuscher of each and every element of the claimed invention arranged as claimed, Heuscher cannot be anticipatory.

Regarding Claims 6, 8 and 17

The Examiner alleges that Heuscher discloses all claimed elements of the subject dependent claims by referencing Heuscher at Column 7 lines 33-59. Paper 26042005, page 4.

In respectful disagreement with the Examiner, and for at least the reasons set forth above, Applicant submits that Heuscher does not disclose *each and every element* of the claimed invention *arranged as claimed*, as the dependent claims inherit all of the limitations of the respective parent claim.

Absent disclosure in Heuscher of each and every element of the claimed invention arranged as claimed, Heuscher cannot be anticipatory.

Regarding Claim 26

The Examiner alleges that Heuscher discloses all claimed elements of the subject dependent claim by referencing Heuscher generally. Paper 26042005, page 4.

In respectful disagreement with the Examiner, and for at least the reasons set forth above, Applicant submits that Heuscher does not disclose *each and every element* of the claimed invention *arranged as claimed*, as the dependent claims inherit all of the limitations of the respective parent claim.

Absent disclosure in Heuscher of each and every element of the claimed invention arranged as claimed, Heuscher cannot be anticipatory.

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Regarding Inherent Anticipation

In addition to the foregoing, the Examiner alleges anticipation by asserting that Heuscher "inherently anticipates" the claimed invention. Paper 26042005, pages 2-3.

Applicant respectfully disagrees.

"[A] prior art reference may anticipate without disclosing a feature of the claimed invention if that characteristic is *necessarily* present, or inherent, in the single anticipating reference." *Toro Co. v. Deere & Co.*, 03-1160, -1161, (CAFC January 20, 2004) (emphasis added) (citing *Schering Corp. v. Geneva Pharmaceuticals, Inc.*, 339 F.3d 1373, 1377-78 (Fed. Cir. 2003)).

In alleging inherent anticipation, the Examiner must show that the claimed element is a *necessary* feature or result of the prior art embodiment, which Applicant respectfully submits has not been shown by the Examiner.

If Applicant understands the Examiner correctly, it appears that the Examiner is alleging that the generation and communication of an exposure marker-in signal from a CT imaging device to an electrocardiogram device is a *necessary* feature of Heuscher.

In respectful disagreement with the Examiner, not only does Applicant find Heuscher to be absent the disclosure, teaching or suggestion of an exposure marker-in signal, as set forth above, but Applicant also finds Heuscher to be absent the *necessary* inclusion of this feature.

As disclosed and taught by Heuscher, it appears to Applicant that the Heuscher cardiac CT system will function as disclosed and claimed without an exposure marker-in signal. Accordingly, absent the *necessary* inclusion of the claimed feature, Heuscher cannot inherently anticipate.

In Heuscher, Applicant submits that it is not *necessary* to have an exposure marker-in signal to practice the invention of Heuscher. Accordingly, Applicant submits that Heuscher does not inherently disclose this feature.

By alleging anticipation through inherency absent specific reference to a *necessary* element that must be present in the cited reference, Applicant respectfully

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submits that the Examiner has failed to properly meet the burden of a showing of anticipation.

Heuscher Comparatively

While Applicant agrees that Heuscher discloses cardiac gating, Applicant submits that such disclosure lacks the disclosure of each and every element of the claimed invention arranged as claimed. While cardiac gating may be directed to a triggering technique in which image acquisition is triggered by a start pulse derived from an EKG taken from the patient while imaging, the instant invention is directed to *an exposure marker-in signal derived from a CT imaging system and communicated to an EKG monitoring device* so as to *overlay EKG waveform data and indicate the start of a CT scan on the EKG waveform data*.

While the instant invention is directed to an exposure marker-in signal being *communicated to* an EKG monitoring device, Heuscher discloses cardiac gating that involves a trigger *derived from* the EKG. Not only does Heuscher lack the *necessary* disclosure of each and every element of the claimed invention arranged as claimed to support anticipation, but teaches a substantially different invention that involves communication *in the opposite direction* to that of the instant invention, thereby teaching away from the instant invention.

Absent disclosure, absolutely or inherently, in Heuscher of each and every element of the claimed invention arranged as claimed, Heuscher cannot be anticipatory.

In view of the foregoing, Applicant submits that Heuscher does not disclose each and every element of the claimed invention arranged as claimed and therefore cannot be anticipatory. Accordingly, Applicant respectfully submits that the Examiner's rejections under 35 U.S.C. §102(b) have been traversed, and requests that the Examiner reconsider and withdraw of these rejections.

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In light of the foregoing, Applicant respectfully submits that the presented arguments comply with 37 C.F.R. §1.116 and should therefore be entered, and with their entry that the application is now in condition for allowance. Such action is therefore respectfully requested.

The Commissioner is hereby authorized to charge any additional fees that may be required for this amendment, or credit any overpayment, to Deposit Account No. 07-0845.

In the event that an extension of time is required, or may be required in addition to that requested in a petition for extension of time, the Commissioner is requested to grant a petition for that extension of time that is required to make this response timely and is hereby authorized to charge any fee for such an extension of time or credit any overpayment for an extension of time to the above identified Deposit Account.

Respectfully submitted,

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